

REMARKS

In paragraph 2 of Action, claims 1-3 were rejected under 35 U.S.C. 102(b) as being anticipated by Wakabayashi et al. In paragraph 4 of the Action, claims 4-5 and 7-9 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wakabayashi et al. in view of von Hein.

In view of the rejections, claim 1 has been amended to contain the subject matter of claims 7 and 8, and claim 9 has been amended to an independent form. Claims 2, 3, 7 and 8 have been cancelled. The amendments do not introduce new issue.

The sheet processing apparatus for folding a sheet bundle at a predetermined position of the invention basically comprises pressing means for pressing a predetermined position of the sheet bundle to fold the sheet bundle, and paired rotating bodies for folding the sheet bundle supplied by the pressing means. The paired rotating bodies have nip portions contacting the sheet bundle. At least one nip portion has a high friction coefficient region and a low friction coefficient region less than the high friction coefficient region in friction coefficient, which are made of different materials. Thus, a pulling force of the rotating bodies to pull the sheet bundle pressed into the nip portions of the rotating bodies by the pressing means has an amount which does not separate a sheet of the sheet bundle contacting the rotating bodies from subsequent sheets in the sheet bundle when pulling the sheet bundle.

In claim 1, each of the paired rotating bodies is formed of one roller having a circular portion forming the nip portion and two non-circular portions. The circular portion has the high and low friction coefficient portions and is located between the two non-circular portions in one roller. The high friction coefficient portion is sandwiched between two low friction coefficient portions

in one circular portion. The structure in claim 1 is shown in Figs. 23(a)-23(c).

In claim 9, each of the paired rotating bodies is formed of one roller having a circular portion and non-circular portions. The circular portion in one of the paired rotating bodies has the high and low friction coefficient portions, and the circular portion in the other of the paired rotating bodies has only the low friction coefficient portion. The structure in claim 9 is shown in Figs. 26(a)-26(c).

In Wakabayashi et al., Figs. 8 and 14 were referred to in the final Action, wherein folding rollers 676A, 676B, 671A, 671B form the pressing means. The rollers 671A, 676A are connected by conveyer belts 677A, while the rollers 671B, 676B are connected by conveyer belts 677B. It is only stated in column 14, lines 22-27 that the at least one pressing roller among the paired pressing rollers 676A and 676B has a surface layer of elastic material, e.g. rubber-coated layer, while the pressing roller 676B is a hard roller, i.e. metallic roller.

In claim 1, each of the paired rotating bodies is formed of one roller having a circular portion forming the nip portion and two non-circular portions. In Wakabayashi et al., all of the rollers 676A, 676B, 671A, 671B are formed of one roller though the belts 677A, 677B are attached. The rollers in Wakabayashi et al. do not have non-circular portions.

In claim 1, in one roller, the circular portion has the high and low friction coefficient portions and is located between the two non-circular portions. In Wakabayashi et al., the roller 676A has the high friction coefficient portion and roller 676B has the low friction coefficient portion. However, it is not disclosed that the one roller has the high and low friction coefficient portions, especially between the two non-circular portions.

In claim 1, the high friction coefficient portion is sandwiched between two low friction coefficient portions in one circular portion. Wakabayashi et al. does not disclose this structure.

In claim 9, each of the paired rotating bodies is formed of one roller having a circular portion and non-circular portions. Wakabayashi et al. has only circular portion. Non-circular portions are not formed in one roller.

In claim 9, also, the circular portion in one of the paired rotating bodies has the high and low friction coefficient portions. In Wakabayashi et al., one roller may have elastic surface or metallic roller, but one roller does not have high and low friction coefficient portions.

Thus, the features of claims 1 and 9 of the invention are not disclosed or suggested in Wakabayashi et al.

In von Hein, folding rollers 4, 5 with recesses 14, 15 are used for folding sheets. The folding roller is shown in Fig. 3, and includes a part 21 for folding the sheets having cut recesses 22, 23 for guiding belts 17, 18, and an area 24 with a recess 25. Namely, the part 21 contacting the sheets in one roller extends substantially entirely throughout the entire length thereof except for the cut recesses 22, 23 for the guiding belts, and the recess 25 also extends in one roller substantially entirely throughout the entire length thereof except for the portions for the guiding belts.

In claim 1, each of the paired rotating bodies is formed of one roller having a circular portion forming the nip portion and two non-circular portions. In von Hein, one roller has the non-circular portion, but there is no circular portion.

In claim 1, the circular portion has the high and low friction coefficient portions and is located between the two non-circular portions in one roller. In von Hein, high and low friction

coefficient portions are not formed in one portion, especially in one circular portion. Thus, von Hein does not have the structure such that the high friction coefficient portion is sandwiched between two low friction coefficient portions in one circular portion as recited in claim 1.

In claim 9, each of the paired rotating bodies is formed of one roller having a circular portion and non-circular portions. In von Hein, the roller does not have the circular portion.

In claim 9, the circular portion in one of the paired rotating bodies has the high and low friction coefficient portions. In von Hein, there are no high and low friction coefficient portions in one roller, or circular portion.

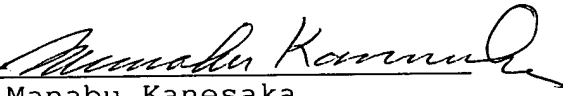
In cave a part of non-circular portion as disclosed in von Hein is combined with the roller of Wakabayashi et al., the roller may have the con-circular portion. However, in the invention, the circular portion in one roller must have the high and low friction coefficient portions. The combination of the cited references does not disclose or suggest the features.

As explained above, the cited references do not disclose or suggest the features of the invention. Even if the cited references are combined, the present invention is not obvious from the cited references.

Reconsideration and allowance are earnestly solicited.

Respectfully Submitted,

KANESAKA AND TAKEUCHI

By 
Manabu Kanesaka
Reg. No. 31,467
Agent for Applicants

1423 Powhatan Street
Alexandria, VA 22314
(703) 519-9785